

High-speed diode

BAL74

■ Features

- Small plastic SMD package
- High switching speed:Max. 4 ns
- Continuous reverse voltage:max. 50 V
- Repetitive peak reverse voltage:max. 50 V
- Repetitive peak forward current:max. 500 mA

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	condition	Min	Max	Unit
Repetitive peak reverse voltage	V_{RM}			50	V
Continuous reverse voltage	V_R			50	V
Continuous forward current	I_{FM}	Note 1		215	mA
Repetitive peak forward current	I_O			500	mA
Non-repetitive peak forward current	I_{FSM}	square wave; $T_j = 25^\circ\text{C}$ prior to surge; $t = 1\ \mu\text{s}$ $t = 1\text{ms}$ $t = 1\ \text{s}$		4 1 0.5	A
Total power dissipation	P_{tot}	$T_{amb} 25^\circ\text{C}$; note 1		250	mW
Storage temperature	T_{stg}		-65	+150	$^\circ\text{C}$
Junction temperature	T_j			150	$^\circ\text{C}$

Note

1. Device mounted on an FR4 printed-circuit board.

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■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Max	Unit
Forward voltage	V_F	$I_F = 1 \text{ mA}$	715	mV
		$I_F = 10 \text{ mA}$	855	
		$I_F = 50 \text{ mA}$	1	V
		$I_F = 150 \text{ mA}$	1.25	
Reverse current	I_R	$V_R = 50 \text{ V}$	0.1	μA
		$V_R = 50 \text{ V}; T_j = 150$	100	
Diode capacitance	C_d	$f = 1 \text{ MHz}; V_R = 0;$	2	pF
reverse recovery time	t_{rr}	when switched from $I_F = 10 \text{ mA}$ to $I_R = 10 \text{ mA}; R_L = 100 \Omega$; measured at $I_R = 1 \text{ mA}$	4	ns
forward recovery voltage	V_{fr}	when switched from $I_F = 10 \text{ mA}; t_r = 20 \text{ ns};$	1.75	V
thermal resistance from junction to tie-point	$R_{th\ j-tp}$		330	K/W
thermal resistance from junction to ambient	$R_{th\ j-a}$		500	K/W

■ Marking

Marking	JCp
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